IN THE CLAIMS:

Please amend the claims to read as follows:

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1. (Currently amended) A route updating method for a micromobility network wherein routers are connected in a tree connection and radio base stations are connected to the routers in ~~the~~ a lowest layer, ~~and~~ said method comprising:

repeating an updating notification of a route from a mobile terminal ~~is repeated~~ , in order, from a radio base station to successive higher order routers, to update the route ~~and~~, a packet ~~is~~ being distributed along the updated route,

wherein a reaching range of an updating notification from the radio base station toward the higher order routers is set so that the reaching frequency of the updating notification is lower with a higher order router.

2. (Currently amended) A route updating method for a micromobility network as claimed in claim 1, wherein directly lower order routers to each router are numbered to the numbers 1 to n with reference to the direct lower order router accommodation number n, and a route from the radio base station to the router in the highest layer represented by a route number, ~~composed of~~ including the numbers of the thus numbered routers, is applied to the radio base station, and

upon updating notification, the route number is referred to to determine a stage number m of a transmission range and the updating notification is transmitted to a higher order router corresponding to the stage number m.

3. (Currently amended) A route updating method for a micromobility network as claimed in claim 1, wherein, when the mobile terminal stays in the radio base station, where ~~the~~ a stage

number of higher order routers from the radio base station necessary to hold the route for the mobile terminal is represented by m and ~~the~~ a direct lower order router accommodation number of each of the routers is represented by n, the transmission range of a packet is set to the router in ~~the~~ a higher order m+1th stage from the radio base station once per n^m times.

4. (Currently amended) A route updating method for a micromobility network as claimed in claim 2, wherein a notification of the route number applied to the radio base station is issued from the radio base station to the mobile terminal, and the mobile terminal determines the stage number m of the transmission range and transmits the stage number ~~m together~~ m, together with the updating notification.

5. (Currently amended) A route updating method for a micromobility network as claimed in claim 3, wherein a notification of the route number applied to the radio base station is issued from the radio base station to the mobile terminal, and the mobile terminal determines the stage number m of the transmission range and transmits the stage number ~~m together~~ m, together with the updating notification.

6. (Original claim) A route updating method for a micromobility network as claimed in claim 2, wherein the radio base station which receives the updating notification from the mobile terminal determines the stage number m of the transmission range.

7. (Original claim) A route updating method for a micromobility network as claimed in claim 3, wherein the radio base station which receives the updating notification from the mobile terminal determines the stage number m of the transmission range.

8. (Original claim) A route updating method for a micromobility network as claimed in claim 2, wherein a route holding time of each of said routers is n times that of the routers which are in the directly lower order to the router.

9. (Original claim) A route updating method for a micromobility network as claimed in claim 3, wherein a route holding time of each of said routers is n times that of the routers which are in the directly lower order to the router.

10. (New) The method of claim 1, wherein said packet includes an indication of said reaching range.

11. (New) The method of claim 10, further comprising:

determining, by a router receiving said packet, whether to forward said packet to a next higher level router in said tree configuration.

12. (New) The method of claim 1, wherein, when a mobile terminal changes from one radio base station to a new radio base station, said reaching range comprises a first layer having no change in a routing to said new radio base station.

13. (New) A route updating method for a micromobility network, wherein routers are connected in a tree configuration and radio base stations are connected to the routers in a lowest layer of said tree configuration, said route updating method comprising:

receiving, in router in a layer of said tree, a routing updating notification packet from

a next lower layer and updating said routing in said router, said packet including an update reaching range defining a highest level in said tree connection to which said updating notification is to be transmitted.

14. (New) The method of claim 13, further comprising:

determining, in said router, whether said update reaching range requires that said routing updating notification packet be forwarded to a router in a next higher layer.

15. (New) A communication network, comprising:

a plurality of routers interconnected in a tree structure having a plurality of layers in an order, each said layer having at least one router; and

at least one radio base station connected to each router in a lowest order layer of said tree structure,

wherein an updating notification of a route from a mobile terminal is repeated in order from a radio base station to successive higher order routers to update the route, a packet being distributed along the updated route for said route update, said packet including an update reaching range that defines a highest level in said tree connection to which said updating notification is to be transmitted.

16. (New) The communication network of claim 15, wherein each said router receiving said route update packet determines whether to forward said received packet to a next higher order router by determining whether said router receiving said packet is the last level in said update reaching range.

17. (New) The communication network of claim 16, wherein, when a mobile terminal changes from one radio base station to a new radio base station, said reaching range comprises a first layer having substantially no change in routing updating notification.

18. (New) A router for a communication network interconnected in a tree structure, said router comprising:

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a lower order network interface for receiving a route updating notification packet from a router of a lower order of said tree structure, said packet including an update reaching range that defines a highest level in said tree connection to which said updating notification is to be transmitted; and

a route information updating section to update a routing information in said router, based on said received packet, and to determine whether said update reaching range requires that said received packet be forwarded to a next higher order router.

19. (New) A radio base station for a communication network comprising a plurality of routers interconnected in a tree structure having a plurality of layers in an ordering, said radio base station comprising:

a wire interface to connect to a lowest order router in said tree structure;

a radio interface to communicate with a mobile terminal using said communication network; and

a beacon signal transmission section to prepare a route number that identifies a location of said radio base station in relation to said tree structure, said location being identified by a string of numbers, said numbers in said string identifying a router location in respective layers of said tree structure, an order of said numbers in said string being in

accordance with an ordering of said layers in said tree structure.

20. (New) The radio base station of claim 19, further comprising:

a calculator to compute an update reaching range of a routing update notification for said mobile terminal, said update reaching range defining a number of said ordered layers of said tree structure that are to receive said routing update notification.

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21. (New) A mobile terminal for a communication network comprising a plurality of routers interconnected in a tree structure having a plurality of layers in an ordering, said mobile terminal comprising:

a radio interface to communicate with a radio base station in said communication network, said radio base station associated with a lower order router in said tree structure; and

a calculator to compute an update reaching range of a routing update notification for said mobile terminal, said update reaching range defining a number of said ordered layers of said tree structure that are to receive said routing update notification.

22. (New) The mobile terminal of claim 21, wherein a location of said radio base station in relation to said tree structure is identified by a string of numbers, each said number in said string identifying a router location in a layer of said tree structure, an order of said numbers in said string being in accordance with an ordering of said layers in said tree structure.

23. (New) The mobile terminal of claim 22, wherein, when a mobile terminal changes from one radio base station to a new radio base station, said reaching range comprises a first layer having substantially no change in routing updating notification.

24. (New) A communication network, comprising:

a plurality of routers interconnected in a tree structure having a plurality of layers in an order, each said layer having at least one router; and

at least one radio base station connected to each router in a lowest order layer of said tree structure, to communicate with mobile terminals,

each said radio base station providing a routing notification of mobile terminals communicating therewith, by periodically repeating an updating notification of a route for said mobile terminals to routers in said tree structure connecting said radio base station to a root node of said tree structure,

wherein an updating notification period of a router in successively higher order layers is set successively longer, thereby allowing an updating notification frequency of said successively higher order layers to be set successively lower.

25. (New) A route updating method for a micromobility network wherein routers are connected in a tree connection and radio base stations are connected to the routers in the lowest layer, and an updating notification of a route from a mobile terminal is repeated in order from a radio base station to successive higher order routers to update the route along which a packet is to be distributed and then a packet is distributed along the updated route, said micromobility network being of the soft state wherein, after an interval of time determined in advance elapses, the route updated is automatically cancelled, said method comprising:

numbering directly lower order routers to each router to the numbers 1 to n with reference to the direct lower order router accommodation number n;

applying a route from the radio base station to the router in the highest layer represented by a route number composed of the numbers of the thus numbered routers to the radio base station; and

referring, upon updating notification, to the route number to determine a stage number m of a transmission range to higher order routers and the updating notification is transmitted to a higher order router corresponding to the stage number m so that a reaching range of the updating notification is set so that the reaching frequency of the updating notification is lower with a higher order router.